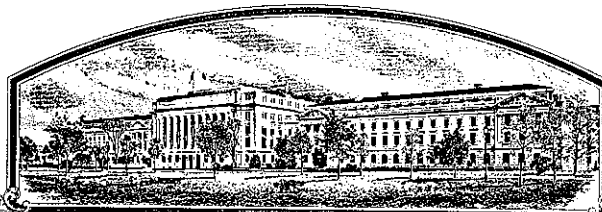


No.



8200168

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Lofts Seed Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE
Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT (7 U.S.C. 2321 ET SEQ.)

HARD FESCUE

'Reliant'



In Testimony Whereof, I have hereunto set
my hand and caused the seal of the Plant
Variety Protection Office to be affixed
at the City of Washington
this 28th day of February in
the year of our Lord one thousand nine
hundred and eighty-three.

Attest:

Kenneth H. Evans
Acting
Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

John R. Block
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN & SEED DIVISION

FORM APPROVED: OMB NO.0581-0

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE
(Instructions on reverse)

No certificate for plant variety protection may be issued unless a completed application form has been received (5 U.S.C. 553).

1. NAME OF APPLICANT(S) <p style="text-align: center;">LOFTS SEED INC.</p>		2. TEMPORARY DESIGNATION <p style="text-align: center;">FL-1</p>		3. VARIETY NAME <p style="text-align: center;">RELIANT</p>	
4. ADDRESS (Street and No. or R.F.D. No., City, State, and Zip Code) <p style="text-align: center;">CHIMNEY ROCK ROAD BOX 146 BOUND BROOK, NEW JERSEY 08805</p>		5. PHONE (Include area code) <p style="text-align: center;">(201)560-1590</p>		FOR OFFICIAL USE ONLY PVPO NUMBER <p style="text-align: center; font-size: 1.2em;">8200168</p>	
6. GENUS AND SPECIES NAME <p style="text-align: center;">Festuca longifolia Thuill.</p>		7. FAMILY NAME (Botanical) <p style="text-align: center;">Gramineae</p>		FILING DATE <p style="text-align: center;">8/30/82</p> TIME <p style="text-align: center;">2:00 <input type="checkbox"/> A.M. <input checked="" type="checkbox"/> P.M.</p>	
8. KIND NAME <p style="text-align: center;">Hard Fescue</p>		9. DATE OF DETERMINATION <p style="text-align: center;">January 1980</p>		FEES RECEIVED AMOUNT FOR FILING <p style="text-align: center;">\$ 500.00</p> DATE <p style="text-align: center;">8/30/82</p> AMOUNT FOR CERTIFICATE <p style="text-align: center;">\$ 250.00</p> DATE <p style="text-align: center;">2/4/83</p>	
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.) <p style="text-align: center;">Corporation</p>					12. DATE OF INCORPORATION <p style="text-align: center;">11/10/48</p>
11. IF INCORPORATED, GIVE STATE OF INCORPORATION <p style="text-align: center;">New Jersey</p>					
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p>Robert W. Duell Soils & Crops Dept. New Jersey Agricultural Experiment Sta. New Brunswick, New Jersey 08903</p> </div> <div style="width: 48%;"> <p>Richard Hurley, Research Director Lofts Seed Inc. Chimney Rock Rd., Box 146 Bound Brook, New Jersey 08805</p> </div> </div>					
14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <p>a. <input checked="" type="checkbox"/> Exhibit A, Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.)</p> <p>b. <input checked="" type="checkbox"/> Exhibit B, Novelty Statement</p> </div> <div style="width: 50%;"> <p>c. <input checked="" type="checkbox"/> Exhibit C, Objective Description of the Variety (Request form from Plant Variety Protection Office.)</p> <p>d. <input checked="" type="checkbox"/> Exhibit D, Additional Description of the Variety</p> </div> </div>					
15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act.) <div style="display: flex; justify-content: space-between;"> <input type="checkbox"/> Yes (If "Yes," answer items 16 and 17 below) <input checked="" type="checkbox"/> No </div>					
16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <div style="display: flex; justify-content: space-between;"> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No </div>		17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? <div style="display: flex; justify-content: space-between;"> <input checked="" type="checkbox"/> Foundation <input type="checkbox"/> Registered <input checked="" type="checkbox"/> Certified </div>			
18. DID THE APPLICANT(S) FILE FOR PROTECTION OF THE VARIETY IN THE U.S. OR OTHER COUNTRIES? <div style="display: flex; justify-content: space-between;"> <div style="width: 60%;"> <p>European name: 'BARFINA' Holland December 8, 1978</p> </div> <div style="width: 35%;"> <p style="text-align: right;">8/26/82</p> <input checked="" type="checkbox"/> Yes (If "Yes," give name of countries and dates) <input checked="" type="checkbox"/> No </div> </div>					
19. HAVE RIGHTS BEEN GRANTED IN THE U.S. OR OTHER COUNTRIES? <div style="text-align: right;"> <input type="checkbox"/> Yes (If "Yes," give name of countries and dates) <input checked="" type="checkbox"/> No </div>					
20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable. <p>The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.</p> <p>Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.</p>					
SIGNATURE OF APPLICANT <p style="font-size: 1.2em; font-family: cursive;">Richard Hurley</p>				DATE <p style="font-size: 1.2em;">8/26/82</p>	
SIGNATURE OF APPLICANT				DATE	

INSTRUCTIONS

General: Send an original copy of the application and exhibits, at least 2,500 viable seeds, and \$500 fee (\$250 filing fee and \$250 examination fee) to U.S. Department of Agriculture, Agricultural Marketing Service, Livestock, Meat, Grain and Seed Division, Plant Variety Protection Office, National Agricultural Library Building, Beltsville, Maryland 20705. (See section 180.175 of the Regulations and Rules of Practice.) Retain one copy for your files. All items on the face of the form are self-explanatory unless noted below.

Item

- 9 Give the date the applicant determined that he had a new variety based on (1) the definition in section 41(a) of the Act and (2) the date a decision was made to increase the seed.
- 14a Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method; (2) the details of subsequent stages of selection and multiplication; (3) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified and (4) evidence of uniformity and stability.
- 14b Give a summary statement of the variety's novelty. Clearly state how this novel variety may be distinguished from all other varieties in the same crop. If the new variety most closely resembles one or a group of related varieties: (1) identify these varieties and state all differences objectively; (2) attach statistical data for characters expressed numerically and demonstrate that these differences are significant; and (3) submit, if helpful, seed and plant specimens or photographs of seed and plant comparisons clearly indicating novelty.
- 14c Fill in the Exhibit C, Objective Description form, for all characteristics for which you have adequate data.
- 14d Describe any additional characteristics that are not described, or whose description cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the description of characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.
- 15 If "Yes" is specified (*seed of this variety be sold by variety name only as a class of certified seed*) the applicant may **NOT** reverse his affirmative decision after the variety has either been sold and so labeled, his decision published, or the certificate has been issued. However, if the applicant specified "No," he may change his choice. (See section 180.16 of the Regulations and Rules of Practice.)
- 16 See section 42 of the Plant Variety Protection Act and section 180.7 of the Regulations and Rules of Practice.

GPO 890-698

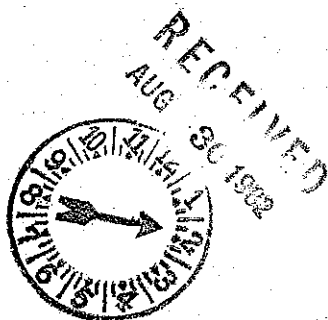


Exhibit A - Origin and Breeding History of 'Reliant'

The parental germplasm of Reliant Hard Fescue was developed by screening over 30,000 seedlings for resistance to the powdery mildew disease incited by Erysiphe graminis D. C. Cultivars of European origin and germplasm accessions collected from old turfs were used. Over 3700 powdery mildew resistant seedlings were selected and established in a spaced-plant field nursery. Immediately before anthesis, 138 plants were selected and transferred to isolated nurseries for cross-pollination. Selection was based on freedom from disease, an attractive bright medium dark green color, a lower turf-type growth habit, uniform maturity and promise of high seed yield potential.

Seed from each plant was subsequently planted in individual turf evaluation plots subjected to frequent mowing at 2cm. Seedlings were selected from turf plots having the best overall performance ratings and subjected to a second cycle of greenhouse screening for powdery mildew resistance. Nearly 2,000 attractive powdery mildew resistant seedlings were selected during greenhouse evaluation and transferred to a spaced-plant field nursery. Prior to anthesis, 43 of the most attractive plants with the best performance records were removed from this nursery and transplanted to an isolation block for the production of breeder seed.

Breeder seed was used to send out samples to universities throughout the United States and Canada for turf evaluations and to establish a two acre foundation field in Western Oregon in the Spring of 1980. In May 1982 a 30 acre field was established which will produce certified seed.

No off-type plants or variants have been observed in the reproduction and multiplication of Reliant. Reliant is a stable and uniform variety. Breeder seed harvested in 1979 and 1980 and foundation seed harvested in 1981 have produced turf and seed fields of equal quality and acceptable uniformity.

EXHIBIT BSTATEMENT OF NOVELTY OF RELIANT HARD FESCUE

'Reliant' can be distinguished from all other cultivars by the combination of spaced-plant and turf characteristics shown in Tables 1-16.

Reliant most closely resembles both Scaldis and Biljart. However, Reliant is significantly more resistant to powdery mildew incited by Erysiphe graminis D. C. (Table 1).

8200158

Table 1. Reaction of hard fescue cultivars to powdery mildew incited by Erysiphe graminis D. C. under greenhouse conditions, New Brunswick, New Jersey.

CULTIVAR	POWDERY MILDEW		
	1977	1982	1982
	9=most resistance		
Reliant	8.0	5.1	7.3
Scaldis	4.3	3.5	2.3
Biljart	4.0	-	0.8
Waldina	-	1.4	2.0
Gallop	-	0.9	0.0
Tournament	-	0.5	0.0
LSD .05	0.6		

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN & SEED DIVISION
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MARYLAND 20705

EXHIBIT C
(Fine Leaved Fescues)

OBJECTIVE DESCRIPTION OF VARIETY
FINE LEAVED FESCUES
(*Festuca spp.*)

NAME OF APPLICANT(S) Lofts Seed Inc.	TEMPORARY DESIGNATION FL-1	VARIETY NAME Reliant Hard Fescue
ADDRESS (Street and No., or R.F.D. No., City, State, and Zip Code) Chimney Rock Road Box 146 Bound Brook, New Jersey 08805		FOR OFFICIAL USE ONLY PVPO NUMBER 8200168

Place the appropriate number that describes the varietal character of this variety in the boxes below. Use leading zeroes when necessary (e.g., or). Characteristics described including numerical measurements, should represent those that are typical for the variety. Measured data should be for SPACED PLANTS. Royal Horticultural Society or any recognized color fan may be used to determine plant colors; designate system used: _____
Describe location of test area, conditions and number of plants used: _____

1. SPECIES: (With comparison varieties for use below - use varieties within species of application variety)

- | | | | | |
|--------------------------------|--|---------------|---------------------|----------------|
| <input type="text" value="5"/> | 1 = <i>F. rubra</i> ssp. <i>commutata</i> (Chewings) | 11 = Cascade | 12 = Highlight | 13 = Jamestown |
| | 2 = <i>F. rubra</i> ssp. <i>litoralis</i> (Creeping Red) | 14 = Banner | 15 = Barfalla | 23 = Merlin |
| | 3 = <i>F. rubra</i> ssp. <i>rubra</i> (Spreading Red) | 21 = Dawson | 22 = Starlight | 33 = Fortress |
| | 4 = <i>F. ovina</i> (Sheep) | 24 = Pennlawn | 32 = Ruby | |
| | 5 = <i>F. longifolia</i> (Hard) | 31 = Boreal | | |
| | 6 = <i>F. tenuifolia</i> (Fine-Leaved Sheep) | 34 = Ensylva | | |
| | 7 = Other (Specify) <i>F.</i> _____ | 41 = Cover | | |
| | | 51 = Durar | 52 = Biljart (C-26) | 53 = Scaldis |
| | | 61 = Panda | 62 = Barok | |

2. CYTOLOGY:

- Chromosome Number ☐ Ploidy 1 = diploid 2 = tetraploid 3 = hexaploid
4 = octoploid

3. ADAPTATION: (0 = Not Tested; 1 = Not Adapted; 2 = Adapted)

- Northeast Southeast North Central Pacific N.W. Other (Specify) temperate climates

4. MATURITY: Date of ~~panicle emergence~~ (panicle emergence) Location(s) of Trial(s) Hubbard, Oregon

- 10/6/82 10% anthesis
Maturity Class:
1 = Very Early (Covar) 2 = Early (Highlight) 3 = Medium Early (Boreal, Dawson)
4 = Medium Late (Cascade, Ruby) 5 = Late (Jamestown, Agram) 6 = Very Late

Date Headed 5/30/80

- | | | | |
|---|-------------------|---|-----------------------------------|
| <input type="text" value="0"/> <input type="text" value="2"/> | Days earlier than | <input type="text" value="0"/> <input type="text" value="2"/> | } (Table 2)
Comparison Variety |
| | Maturity same as | <input type="text" value="0"/> <input type="text" value="2"/> | |
| <input type="text" value="0"/> <input type="text" value="2"/> | Days later than | <input type="text" value="5"/> <input type="text" value="2"/> | |

5. PLANT HEIGHT: (At maturity; to top of panicle; Average of 10 tallest culms)

- | | | |
|---|-----------------|-----------------------------------|
| <input type="text" value="1"/> <input type="text" value="0"/> <input type="text" value="2"/> <input type="text" value="6"/> | mm height | } (Table 3)
Comparison Variety |
| <input type="text" value="0"/> <input type="text" value="2"/> <input type="text" value="0"/> | mm shorter than | |
| | Height same as | |
| <input type="text" value="0"/> <input type="text" value="2"/> <input type="text" value="0"/> | mm taller than | |

6. GROWTH HABIT: (Mature)

- 1 = Erect (Ruby) 2 = Semi-erect (Highlight) 3 = Prostrate (Silvana)

7. RHIZOMES:

- | | | | | | |
|--|---------------------------------------|--|--------------------------------|--|---------------------|
| <input type="text" value="1"/> <input type="text" value="0"/> <input type="text" value="0"/> | mm Length | <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> | mm Width | <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> | mm Internode length |
| <input type="text" value="1"/> | 1 = Absent (Highlight) | 2 = Weakly Creeping (Dawson) | 3 = Strongly Creeping (Boreal) | | |
| | 4 = Very Strongly Creeping (Fortress) | | | | |

8. LEAF BLADE:

<input type="checkbox"/>	Color:	1 = Light Green (Starlight)	2 = Medium Light Green (Highlight)	3 = Medium Dark Green (Ruby, Agram)
		4 = Dark Green (Jamestown, Manoir)	5 = Bluegreen (Saphir)	6 = Graygreen (Scaldis)
		7 = Other (Specify) _____		
<input type="checkbox"/>	Glaucosity (Sowing Year):	1 = Absent (Koket)	2 = Present (Vendome)	
<input type="checkbox"/>	Anthocyanin: 1 = Absent	2 = Present	<input type="checkbox"/>	Hairs (Basal) 1 = Absent 2 = Present
<input type="checkbox"/>	Margins: 1 = Smooth	2 = Semi-rough	3 = Rough	
<input type="checkbox"/>	Margin folding (closure):	1 = Rolled inward (closed-Highlight)	2 = Flat (open-Jamestown, Engina)	
<input type="checkbox"/>	Width class:	1 = Very Fine (Agram, Frida)		
		2 = Fine (Jamestown, Highlight, Banner, Dawson)		
		3 = Medium Fine (Fortress, Ruby, Scaldis)		
		4 = Medium Coarse (Engina)		
<input type="checkbox"/>	mm Length (flag leaf)			
<input type="checkbox"/>	mm Shorter than	<input type="checkbox"/>	(Table 4)	
<input type="checkbox"/>	Blade length same as	<input type="checkbox"/>	Comparison Variety	
<input type="checkbox"/>	mm Longer than	<input type="checkbox"/>		
<input type="checkbox"/>	mm Width (flag leaf)			
<input type="checkbox"/>	mm Narrower than	<input type="checkbox"/>	(Table 5)	
<input type="checkbox"/>	Blade width same as	<input type="checkbox"/>	Comparison Variety (Table 5)	
<input type="checkbox"/>	mm Wider than	<input type="checkbox"/>		

9. LEAF SHEATH:

<input type="checkbox"/>	Anthocyanin (seedling):	1 = Absent (Highlight)	2 = Present (Jamestown, Fortress, Marga)
<input type="checkbox"/>	Auricle Hairiness:	1 = Absent	2 = Present
<input type="checkbox"/>	Margins:	1 = Open (Highlight)	2 = Closed (Jamestown)

10. PANICLE (Mature plant):

<input type="checkbox"/>	Shape:	1 = Narrow-tapering	2 = Ovate	3 = Oblong	4 = Other (Specify) _____
<input type="checkbox"/>	Type:	1 = Open	2 = Intermediate	3 = Compact	
<input type="checkbox"/>	Orientation:	1 = Erect	2 = Nodding		
<input type="checkbox"/>	Branch Pubescence:	1 = Glabrous	2 = Pubescent		
<input type="checkbox"/>	Anther Color:	1 = Yellowish Green	2 = Green	3 = Bluish Green	4 = Purplish
<input type="checkbox"/>	Glume Color (At 50% flowering):	5 = Reddish	6 = Other (Specify) _____		
<input type="checkbox"/>	mm Length				
<input type="checkbox"/>	mm Shorter than	<input type="checkbox"/>	(Table 6)		
<input type="checkbox"/>	Panicle length same as	<input type="checkbox"/>	Comparison Variety		
<input type="checkbox"/>	mm Longer than	<input type="checkbox"/>			

11. PALEA:

<input type="checkbox"/>	Hairs (On keels or margins):	1 = Absent (Banner)	2 = Short (Agram, Scaldis, Olds)
		3 = Long (Rainier, Fortress, Jamestown)	

12. LEMMA (Mature):

89H 10/22/82

1

Hairs: 1 = Absent (Jamestown) 2 = Several 3 = Many (Highlight)

4 6

mm Lemma Length

0 4

mm Shorter than 5 3

Lemma length same as 5 2

(Table 7)
Comparison Variety

mm Longer than

0 0 1

mm Lemma Width

mm Narrower than

Lemma width same as 5 3

(Table 8)
Comparison Variety

mm Wider than

2

Awns: 1 = Absent 2 = Present

2 2

mm Awn Length

0 7

mm Shorter than 5 3

Awn length same as

(Table 9)
Comparison Variety

0 3

mm Longer than 5 2

13. SEED (With lemma & palea):

4

10/6/82

Size Class (g/1000 seed):

1 = < .9g (Biljart, Dawson)

3 = 1.1 - 1.3g (Fortress, Novorubra)

2 = .9 - < 1.1g (Jamestown, Highlight)

4 = > 1.3g (Boreal, Golfrood)

1 7 6 7

mg per 1000 seed

0 0 5 2

mg per 1000 seed less than 5 2

Seed Weight same as 5 3

(Table 10)
Comparison Variety

mg per 1000 more than

14. DISEASE, INSECT, AND NEMATODE REACTION (0 = Not Tested, 1 = Susceptible, 2 = Resistant):

2

Melting-out *Drechslera poae*
(*Helminthosporium vagans*)

2

Stripe rust *P. striiformis*

0

Leaf spot *D. siccans*

2

Leaf rust *P. poae-nemorale*

2

Net blotch *D. dictyoides* (Table 11)

0

P. crandallii

0

Leaf spot *Bipolaris sorokiniana*

2

Pythium Blight *Pythium ultimum*

2

Brown patch *Rhizoctonia solani*

2

Red thread *Corticium fusciforme*

2

Powdery mildew *Erysiphe graminis* (Table 1)

2

Dollar spot *Sclerotinia homoeocarpa* (Table 12)

2

Stripe smut *Ustilago striiformis*

0

Insect _____

2

F. Patch, Pink snow-mold *Fusarium nivale*

0

Nematode _____

2

Fusarium blight *F. tricinctum*, *F. roseum*

2

Other *Colletotrichum graminicola*

2

Gray snow mold *Typhula lotana*

Other _____

2

Stem rust *Puccinia graminis*

Other _____

15. GIVE VARIETY OR VARIETIES THAT MOST CLOSELY RESEMBLE THE APPLICATION VARIETY. For the following characteristics indicate Degree of Resemblance by placing the column marked, D.R., one of the following numbers:

- 1 = Application variety is less than comparison variety. 2 = Same As
3 = More than, better, greater, darker, more disease resistant, etc.

CHARACTER	VARIETY	D.R.	CHARACTER	VARIETY	D.R.
Rhizome Length	NA		Growth Habit	Biljart/Scaldis	2
Leaf Width	Biljart/Scaldis	2	Leaf Color	Biljart/Scaldis	2
Panicle Color	Biljart/Scaldis	2	Panicle Shape	Biljart/Scaldis	2
Winter Color	Biljart/Scaldis	2	Cold Injury	Biljart/Scaldis	2
Shade Tolerance	Biljart/Scaldis	2	Heat	Biljart/Scaldis	2
Drought	Biljart/Scaldis	2	Disease*	Biljart/Scaldis	3

* Specify each disease evaluated. Erysiphe graminis (Table 1)

16. ADDITIONAL DESCRIPTION: (Use additional sheets as required)

Describe all characteristics that cannot be adequately described in the form above in Exhibit D. Comparative varieties should be used as may be appropriate, such as for disease. Append all comparative trial and evaluation data, including measured characters, environmental, and disease tests.

EXHIBIT D

ADDITIONAL DESCRIPTION OF RELIANT

'Reliant' is a leafy, persistent, turf-type hard fescue capable of producing an attractive, very dense, low growing, fine textured turf with limited or no supplemental irrigation and fertilization in New Jersey.

Widely spaced seedlings give rise to densely tufted plants, with culms erect or slightly bent at the base, slender and stiff, with nodes usually black but occasionally tinged with red-purple. In a test conducted at Adelphia, New Jersey two year old plants attained a mean circumference of 77.9cm (Table 13) contained 57 culms/plant (Table 14), with an upper internode length of 33cm (Table 14). Ripe panicles weighed 104mg per year-old plant (Table 14). Closely spaced seedlings mowed frequently developed an exceptionally dense tight turf of stiff upright fine foliage. Leaves under turf conditions are deeply infolded, and sharply pointed. Turf maintains green color very well in midsummer. Hairs on keels of palea and lemma are short. Seeds tightly held by hardened lemma and palea and measure 2.5x0.8mm.

Figure 1 is a photograph of a gel slab that shows the banding pattern of esterases developed from protein extracts of seeds of hard fescues.

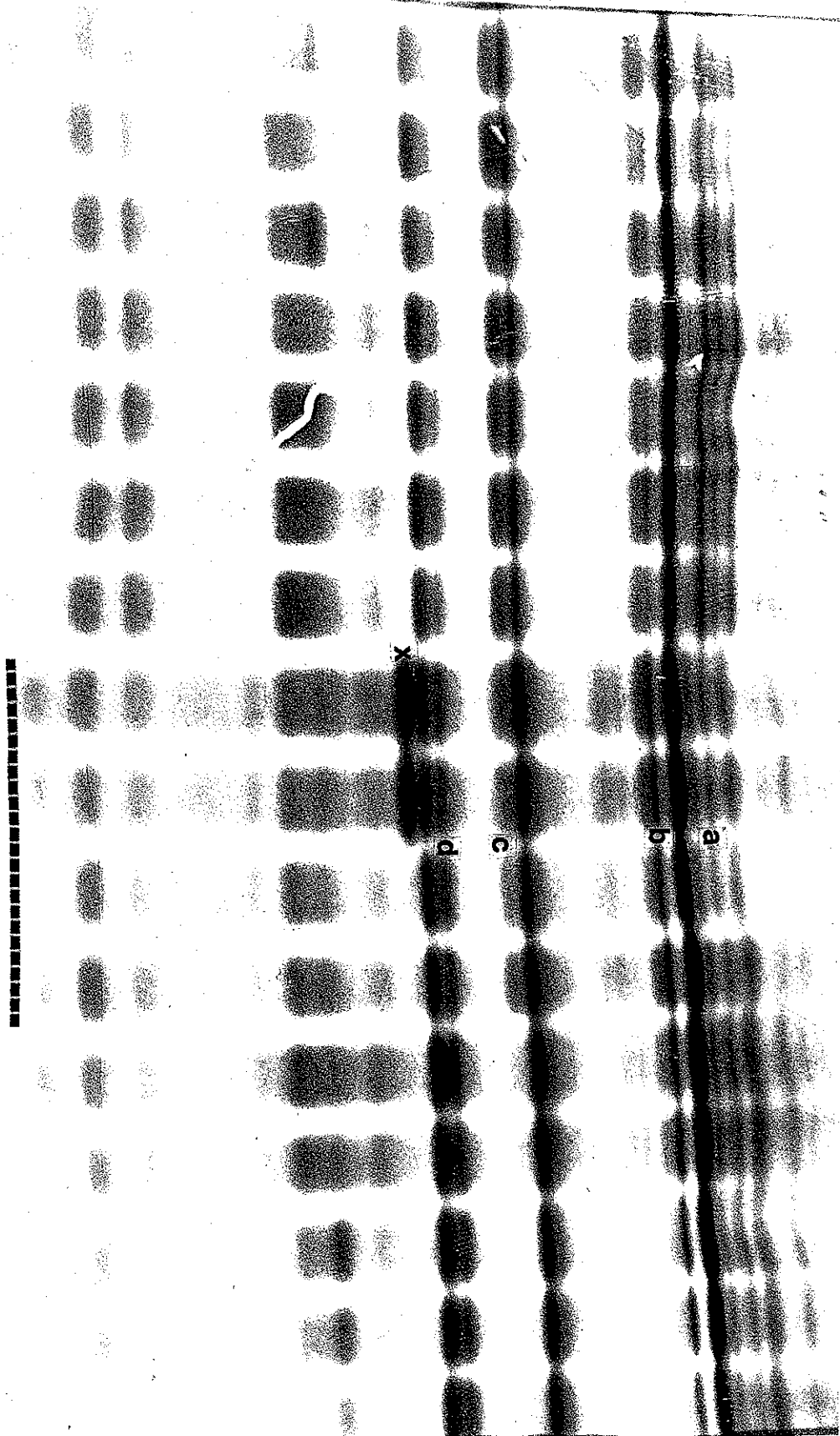
Banding patterns of the seven commercial samples of certified seed of Scaldis appear very similar to each other, as do the five samples of Biljart. The two left hand columns of FL-1 (Reliant) each contain a conspicuous heavy band (x) attributed to known contaminants of foreign grass seeds. The above factors testify to the reproducibility and sensitivity of the isoelectric focusing technique employed.

It should be noted that the two right hand columns of FL-1 differ from those of any sample of Scaldis and Biljart in several aspects of the esterase banding patterns.

Specifically: band a of FL-1 Scaldis
band b of FL-1 Scaldis
band c of FL-1 Scaldis
band c of FL-1 Biljart
band d of FL-1 Biljart

These differences provide evidence which may be used to distinguish FL-1 (Reliant) from Scaldis and Biljart. A description of the technique employed in developing Figure 1 will appear in an article entitled "Isoelectric Focusing of Esterases for Fine Fescue Identification" to be published in Crop Science. See attached letter from Dr. K. H. Asay. (See also Isozymes in Plant Breeding by Charles M. Rick).

FESTUCA OVINA subsp. DURIVUSCULA



SCALDIS

FL I

BILJART

Esterase patterns of seven commercial samples of Scaldis, duplicates of two samples of FL I, and five samples Biljart hard fescue.

FILED

JAN 14 1998

**LONNA R. HOOKS
SECRETARY OF STATE**

**CERTIFICATE OF MERGER OF
LOFTS SEED, INC. INTO
LOFTS MERGERCO, INC.**

To: The Secretary of State
State of New Jersey

Pursuant to the provisions of Section 14A:10-7 Corporations, General, of the New Jersey Statutes, the undersigned corporations hereby execute the following Certificate of Merger.

ARTICLE ONE

The names of the corporations proposing to merge and the states under the laws of which such corporations are organized, are as follows:

<u>Name of Corporation</u>	<u>State of Incorporation</u>
Lofts Seed, Inc.	New Jersey
Lofts Mergerco, Inc.	Nevada

ARTICLE TWO

The laws of the State of Nevada, the state under which such foreign corporation is organized, permit such merger and the applicable provisions of the laws of said jurisdiction have been, or upon compliance with filing and recording requirements will have been, complied with.

ARTICLE THREE

The name of the surviving corporation shall be Lofts Mergerco, Inc. and it shall be governed by the laws of the State of Nevada.

The address of the surviving corporation's registered office is 2700 Sunset Rd., Las Vegas, Nevada 89120 and the name of the registered agent at such address is Johnny Thomas.

ARTICLE FOUR

The following plan of Merger was approved by the shareholders of the undersigned domestic corporation in the manner prescribed by the New Jersey Business Corporation Act, and was approved by the undersigned foreign corporation in the manner prescribed by the laws of the State under which it is organized:

0100731429

FILED
IN THE OFFICE OF THE
SECRETARY OF STATE OF THE
STATE OF NEVADA

JAN 26 1998

26394-92

Dean Heller
DEAN HELLER, SECRETARY OF STATE

CERTIFICATE OF AMENDMENT OF

ARTICLES OF INCORPORATION OF

LOFTS MERGERCO, INC.

Pursuant to the provisions of Nevada Revised Statutes, Title 7, Chapter 78, the undersigned officers do hereby certify:

FIRST: The name of the Corporation is Loftis Mergerco, Inc.

SECOND: The Board of Directors of the Corporation duly adopted the following resolutions on January 12, 1998:

RESOLVED, that it is advisable in the judgment of the Board of Directors of the Corporation that the name of the Corporation be changed, and that, in order to accomplish the same, Article FIRST of the Articles of Incorporation be amended to read as follows:

"FIRST: The name of the corporation (hereinafter called the Corporation) is Loftis Seed Company, Inc."

FURTHER RESOLVED, that a special meeting of the sole stockholder having voting power be and it is hereby called and that notice be given in the manner prescribed by the By-laws of the Corporation and by Nevada Revised Statutes, Title 7, Chapter 78, unless the said stockholder shall waive the notice of meeting in writing or unless the said stockholder shall dispense with the holding of a meeting and shall take action upon the proposed amendment by a consent in writing signed by the sole stockholder, and

FURTHER RESOLVED, that in the event that the said stockholder shall adopt the aforesaid proposed amendment by a vote in favor thereof by at least a majority of the voting power or by a written consent in favor thereof signed by the sole stockholder without a meeting, the Corporation is hereby authorized to make by the hands of its President or a Vice President and by its Secretary or an Assistant Secretary a certificate setting forth the said amendment and to cause the same to be filed pursuant to the provisions of Nevada Revised Statutes, Title 7, Chapter 78.

THIRD: The total number of outstanding shares having voting power of the Corporation is 200, and the total number of votes entitled to be cast by the holder of all of said outstanding shares is 200.

FOURTH: The holder of all of the aforesaid total number of outstanding shares having voting power dispensed with the holding of a meeting of the sole stockholder and adopted the amendment herein certified by a consent in writing signed by the sole stockholder in accordance with the provisions of Nevada Revised Statutes, Title 7, Section 78.320.

January 27, 1998

LOFTS MERGERCO, INC.

By

Johnny R. Thomas
President

Kathleen L. Gillespie
Assistant Secretary

State of Nevada)
) SS.:
County of Clark)

On January 22, 1998, personally appeared before me, a Notary Public, for the State and County aforesaid, Johnny R. Thomas, as President and Kathleen L. Gillespie, as Assistant Secretary of Loftis Mergerco, Inc., who acknowledged that they executed the above instrument.



Notary Public

NOV 29 1999

No.

C 7946-89

Dean Heller

DEAN HELLER, SECRETARY OF STATE

ARTICLES OF MERGER
OF
LOFTS SEED COMPANY, INC.
INTO
AGRIBIOTECH, INC.

Pursuant to the provisions of N.S.R. § 92A.180 and N.R.S. § 92A.200, AgriBioTech, Inc., a Nevada corporation, hereby submits these Articles of Merger for the purpose of merging Loft's Seed Company, Inc., a Nevada corporation and wholly-owned subsidiary of AgriBioTech, Inc., into AgriBioTech, Inc.

ARTICLE I.

Corporations Proposing to Merge and Surviving Corporation

The name of the merging corporation is Loft's Seed Company, Inc., a Nevada corporation (hereinafter called the "Subsidiary Corporation"); and the name of the corporation which shall be the surviving corporation is AgriBioTech, Inc., a Nevada corporation (hereinafter called the "Parent Corporation").

ARTICLE II.

Adoption of Plan of Merger

The Plan of Merger set forth in Article IV was duly adopted by the Parent Corporation and the Subsidiary Corporation.

ARTICLE III.

Approval by Shareholders

Pursuant to N.R.S. § 92A.180, neither the approval of the Shareholders of the Parent Corporation, nor the approval of the Shareholders of the Subsidiary Corporation was required.

ARTICLE IV.

Plan of Merger

The following Plan of Merger was duly approved on November 15, 1999, in the manner prescribed by law with respect to each of the corporations participating in the Merger:

Section 1. Corporations Proposing to Merge and Surviving Corporation. The name of the merging corporation is Loft's Seed Company, Inc., a Nevada corporation (hereinafter called the "Subsidiary Corporation"); and the name of the corporation which shall be the surviving corporation is AgriBioTech, Inc., a Nevada corporation (hereinafter called the "Parent Corporation").

Section 2. Effective Time of Merger. The effective time of the merger shall be November 29, 1999 at 11:59 p.m. E.S.T. (the "Effective Time").

Section 3. Effects of Merger. The Merger shall have the effects set forth in N.R.S. § 92A.250.

Section 4. Conversion of Shares. Each share of capital stock of the Subsidiary Corporation issued and outstanding at the Effective Time shall, as of the Effective Time, by virtue of the Merger and without any action on the part of the holder thereof, be canceled and extinguished without consideration given therefor. The shares of capital stock of the Surviving Corporation shall continue to be outstanding without change.

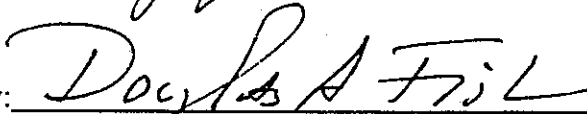
Section 5. Articles of Incorporation and Bylaws. The Articles of Incorporation and the Bylaws of the Surviving Corporation as in effect immediately prior to the Effective Time shall become the Articles of Incorporation and Bylaws of the Surviving Corporation following the Effective Time until changed in accordance with their terms and applicable law.

[Signature page to follow]

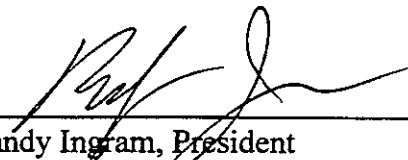
This the 15th day of November, 1999.

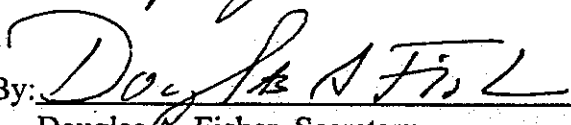
AGRIBIOTECH, INC., a Nevada corporation

By: 
Randy Ingram, Executive Vice President

By: 
Douglas A. Fisher, Secretary

LOFTS SEED COMPANY, INC., a Nevada corporation

By: 
Randy Ingram, President

By: 
Douglas A. Fisher, Secretary

STATE OF)
) SS.:
COUNTY OF)

R#0185253.01

The Company hereby further acknowledges and affirms that the rights and remedies of the Lender with respect to the security interest in and lien upon the Company's rights in the Agricultural Intellectual Property Collateral made and granted hereby are more fully set forth in the Loan Agreement, the terms and provisions of which are hereby incorporated herein by reference as if fully set forth herein.

Further, by this Security Agreement, the Company agrees to assign to Lender, upon the occurrence of an Event of Default by the Company (as defined in the Loan Agreement), all of the Company's rights in and to the Agricultural Intellectual Property Collateral; provided that this assignment is expressly contingent upon the occurrence of an Event of Default.

This Security Agreement will become effective June 28, 1996 at the Effective Time of the Merger of Budd Acquisition, Inc., a New Jersey corporation, with and into Lofts Seed Inc., a New Jersey corporation, as provided in a Certificate of Merger to be filed with the New Jersey Secretary of State's office.

IN WITNESS WHEREOF, the Company has caused this Security Agreement to be duly executed by its authorized officer of agent as of June 28, 1996.

LOFTS SEED INC.

[Corporate Seal]

By: Richard P. Budd

Name:

Title: CEO

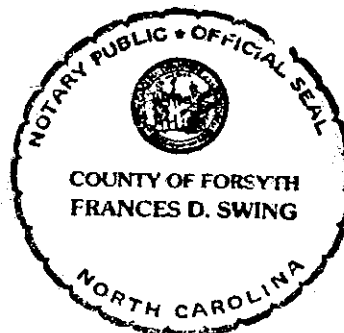
On JUNE 28, 1996, RICHARD P. BUDD personally came before me, FRANCES D. SWING, a Notary Public for said County and State, RICHARD P. BUDD who being by me duly sworn, says that he is CEO of Lofts Seed Inc., and that said writing was signed and sealed by him on behalf of said corporation by its authority duly given. The said RICHARD P. BUDD acknowledged the said writing to be the act and deed of the corporation.

WITNESS my hand and notarial seal.

Frances D. Swing
Notary Public

My Commission Expires: 2-9-97

Dated this 28th day of June 1996.



SCHEDULE A
AGRICULTURAL INTELLECTUAL PROPERTY COLLATERAL
(CERTIFICATES OF PLANT VARIETY PROTECTION)

A. KENTUCKY BLUEGRASS

VARIETY NAME	NUMBER	DATE APPLIED	DATE ISSUED	EXPIRES
Princeton P105	9600228	4-22-96	Pending	
Eagleton	9600277	6-11-96	Pending	
Preakness	9500090	2-13-95	Pending	
Mystic	8100157	8-26-81	5-27-82	5-27-00
Georgetown	8200187	1982	7-24-83	7-21-01
Lofts 1757	8800230	1988	9-30-92	9-30-10
Laser (Rough Bluegrass)	8900288	1989	10-31-91	10-31-09
Co-owned PVPs				
243 (Nassau)*	8400005	1983	12-21-84	12-21-02
Suffolk*	8800072	1988	5-31-88	5-31-06
Ram I**	7800069	1978	3-15-79	3-15-96

* Jacklin Seed Company listed as co-owner

** Mrs. Barbara B. Curtis listed as co-owner

B. PERENNIAL RYEGRASS

VARIETY NAME	NUMBER	DATE APPLIED	DATE ISSUED	EXPIRES
Palmer	8200178	9-8-82	5-31-84	5-31-02
Palmer II	9200209	6-16-92	Pending	
Prelude	8200177	9-8-82	5-31-84	5-31-02
Prelude II	9200210	6-16-92	Pending	
Yorktown III	9200212	6-16-92	Pending	

VARIETY NAME	NUMBER	DATE APPLIED	DATE ISSUED	EXPIRES
Repell	8400148	8-30-84	11-29-85	11-29-03
Yorktown II	7800001	10-6-77	5-1-80	5-1-97
Repell II	9200211	6-16-92	Pending	

C. TALL FESCUE

VARIETY NAME	NUMBER	DATE APPLIED	DATE ISSUED	EXPIRES
Rebel	8000153	8-21-80	5-14-81	5-14-99
Rebel III	9500129	4-10-95	Pending	
Rebel Jr.	9000240	1990	11-30-92	11-30-10
Rebel 3D	9300200	4-21-93	Pending	
Tribute	8800235	9-15-88	2-28-90	2-28-08
Clemfine	8200175	9-7-82	2-28-83	2-28-01
Rebel II	8700195	1987	1-15-88	1-15-06

D. FINE FESCUE

VARIETY NAME	NUMBER	DATE APPLIED	DATE ISSUED	EXPIRES
Reliant	8200168	1982	2-28-83	2-28-01
Jamestown II	9100254	1991	8-31-95	8-31-15

E. BENTGRASS

VARIETY NAME	NUMBER	DATE APPLIED	DATE ISSUED	EXPIRES
L93	9600256	5-8-96	Pending	
Southshore	9200256	1992	10-31-94	10-31-12

F. OTHER

VARIETY NAME	NUMBER	DATE APPLIED	DATE ISSUED	EXPIRES
Salty (weeping alkaligrass)	9500128	4-10-95	Pending	
Laser II (rough bluegrass)	9500238	6-15-95	Pending	

**RECORDATION FORM COVER SHEET
PVP CERTIFICATES ONLY**

U.S. DEPARTMENT OF AGRICULTURE
Plant Variety Protection Office

To the Acting Commissioner of the Plant Variety Protection Office. Please record the attached original documents or copy thereof.

1. Name of conveying party(ies):

LOFTS SEED COMPANY, INC.

- ☐ Individual(s) ☐ Association
☐ General Partnership ☐ Limited Partnership
☒ Corporation - State Nevada
☐ Other _____

Additional name(s) of conveying party(ies) attached? ☐ Yes ☒ No

3. Nature of conveyance:

- ☐ Assignment ☐ Merger
☒ Security Agreement ☐ Change of Name
☐ Other _____

Execution Date: June 23, 1998

2. Name and address of receiving party(ies):

Name: BANKAMERICA BUSINESS CREDIT, INC.

Street Address: 55 South Lake Avenue, Suite 900

City: Pasadena State: California

ZIP: 91101

☐ Individual(s) citizenship _____

☐ Association _____

☐ General Partnership _____

☐ Limited Partnership _____

☒ Corporation-State Delaware

☐ Other _____

If assignee is not domiciled in the United States, a domestic representative designation is attached: ☐ Yes ☐ No
 (Designation must be a separate document from Assignment)
 Additional name(s) & address(es) attached? ☐ Yes ☒ No

4. PVP certificate identifying information:

A. PVP No.: **8200168**

B. Date certificate issued or application filed: **02/28/83**

C. Variety: **"RELIANT" Fescue, hard**

Additional numbers attached? ☐ Yes ☒ No

5. Name and address of party to whom correspondence concerning document should be mailed:

Name: Tamsen Valoir
Jenkins & Gilchrist

Internal Address: _____

Street Address: 1445 Ross Avenue,
Suite 3200

City: Dallas State: Texas Zip: 75202-2799

6. Total number of PVP applications or certificates involved: **1**

7. Total fee (37 CFR 3.41): \$ **25.00**

☒ Enclosed

☐ Authorized to be charged to deposit account.

8. Deposit Account number: _____

(Attach duplicate copy of this page if paying by deposit account)

DO NOT USE THIS SPACE

9. Statement and signature.

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

Tamsen Valoir

Name of Person Signing

Signature

June 30, 1998

Date

Total number of pages comprising cover sheet:

1

PVP CERTIFICATE ASSIGNMENT

WHEREAS, LOFTS SEED COMPANY, INC., a Nevada corporation ("Assignor"), having a business address of 191 Budd Blvd., Winston Salem, NC 27114, is the owner of the pending or issued Plant Protection Act (PVP) certificate(s) listed below; and

WHEREAS, BankAmerica Business Credit, Inc., a Delaware corporation, having an office at 55 South Lake Avenue, Suite 900, Pasadena, California 91101 as "Agent" for the "Lenders" as defined and described in the Loan and Security Agreement dated as of June 23, 1998 ("Assignee"), is desirous of acquiring a SECURITY INTEREST in such PVP certificate(s);

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, said Assignor does hereby sell, assign, transfer and set over unto the said Assignee a SECURITY INTEREST in, to, and under the PVP certificate(s):

No. 9600256 Pending
No. 9200256 Issued
No. 9500090 Pending
No. 9600228 Pending
No. 9600277 Pending
No. 8100157 Issued
No. 8200187 Issued
No. 8800230 Issued
No. 9500238 Pending
No. 8900288 Issued
No. 9300200 Pending
No. 9500129 Pending
No. 8000153 Issued
No. 8200175 Issued
No. 8700195 Issued
No. 8800235 Issued
No. 9000240 Issued
No. 9200209 Pending
No. 9200210 Pending
No. 9200211 Pending
No. 9200212 Pending
No. 8200177 Issued
No. 8200178 Issued
No. 8400148 Issued
No. 8200168 Issued
No. 9100254 Issued
No. 9500128 Issued

LOFTS SEED COMPANY, INC.

By: _____

Printed Name: Henry A. Ingalls

Title: Vice President

STATE OF TEXAS

§

§

COUNTY OF DALLAS

§

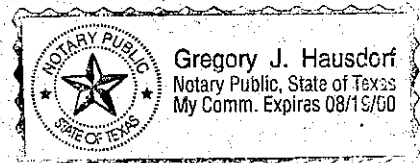
Henry A. Ingalls, Vice President, of LOFTS SEED COMPANY, INC., personally appeared before me, and being first duly sworn declared that he signed the security agreement in the capacity designated, and further states that he has read the above security agreement, and the statements therein contained are true.

SUBSCRIBED AND SWORN TO before me this 23 day of June, 1998.

Notary Public in and for the State of Texas

My Commission Expires: _____

Printed Name



UNITED STATES DEPARTMENT OF AGRICULTURE
PLANT VARIETY PROTECTION OFFICE

CERTIFICATE OF MAILING

BOX ASSIGNMENT

Acting Commissioner of the Plant Variety Protection Office
Plant Variety Protection Office
10301 Baltimore Blvd.
Beltsville, MD 20705-2351.

Dear Sir:

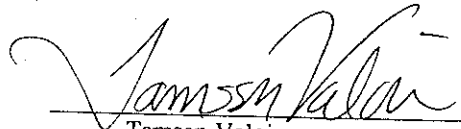
I hereby certify that this correspondence,

74 Cover sheets
74 Assignments
Check in the amount of \$1,850.00 (74 x \$25.00)
74 Return postcards

for the attached (in Exhibit A) PVP certificate numbers are being deposited with the United States Postal Service as Express Mail, mailing label number EE507465254US, postage prepaid, in an envelope addressed to:

BOX ASSIGNMENT

Acting Commissioner of the Plant Variety Protection Office
Plant Variety Protection Office
10301 Baltimore Blvd.
Beltsville, MD 20705-2351.


Tamsen Valoir

Date: July 1, 1998

IPHO:15412.1 20992-00039

Jenkins & Gilchrist

A PROFESSIONAL CORPORATION
1100 LOUISIANA STREET, SUITE 1800
HOUSTON, TEXAS 77002

TEXAS COMMERCE BANK, N.A.
301 W. BEAUREGARD
SAN ANGELO, TEXAS 76903

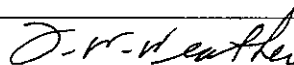
903870

DATE	AMOUNT
July 1, 1998	*\$1,850.00*

AY *One Thousand Fifty Dollars and 00 Cents*

TO THE
ORDER
OF

U. S. Department Of Agriculture
Plant Variety Protection Office


TWO SIGNATURES REQUIRED OVER \$2500
VOID AFTER 180 DAYS
NOT VALID FOR OVER \$5000

⑈0903870⑈ ⑆111300880⑆ ⑈06300009654⑈

UNITED STATES DEPARTMENT OF AGRICULTURE
PLANT VARIETY PROTECTION OFFICE

CERTIFICATE OF MAILING

BOX ASSIGNMENT

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Plant Variety Protection Office
10301 Baltimore Blvd.
Beltsville, MD 20705-2351.

Dear Sir:

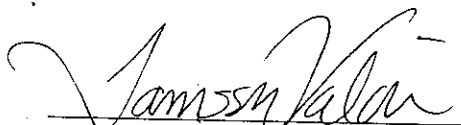
I hereby certify that this correspondence,

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74 Assignments
Check in the amount of \$1,850.00 (74 x \$25.00)
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Tamsen Valoir

Date: July 1, 1998

IPHO:15412.1 20992-00039

Jenkins & Gilchrist

A PROFESSIONAL CORPORATION
1100 LOUISIANA STREET, SUITE 1800
HOUSTON, TEXAS 77002

TEXAS COMMERCE BANK, N.A.
301 W. BEAUREGARD
SAN ANGELO, TEXAS 76903

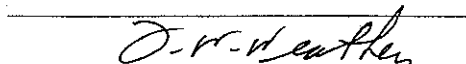
903870

DATE	AMOUNT
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Plant Variety Protection Office



TWO SIGNATURES REQUIRED OVER \$2500
VOID AFTER 180 DAYS
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⑈0903870⑈ ⑆111300880⑆ ⑈06300009654⑈